

# Operating instructions

## Headend Controller

### Headend control unit with 8A power supply



## Contents

1. Safety and operating instructions .....	2
2. Device variants.....	2
3. General .....	2
4. Front view.....	3
5. Functional description .....	3
6. Structure .....	3
7. Head end bus structure .....	4
8. Redundancy circuit .....	4
9. Alarm function .....	5
10. Technical data .....	5
11. Programming .....	6
10.1 Main program .....	6
10.2 Adjustments .....	6
10.3 Subroutine “Change configuration“ .....	7
10.4 Adjusting of the IP number .....	7
11. Bibliography .....	8
12. Document history .....	8



**HCB 200**  
**Part N°: 9652.01**

*...Setting Signals*

## 1. Safety and operating instructions



When assembling, starting-up and adjusting the modules, it is necessary to consider the system specific references in the manual instruction!



The modules may only be installed and started up by authorized technical personnel!



When assembling the modules into the receiving points, the adherence of the EMC regulations is to be secured!



The assembly and wiring have to be done without voltage!



All active modules may only be operated with the Headend Controller HCB 200 or Bus Extender BEB x00!



The main voltage and the operating voltage of the modules working by DC have to be in compliance to the operating parameters described in the technical data.



With all work the defaults of the DIN EN 50083 have to be considered! Especially the safetyrelevant execution of the DIN EN 60728-11 [1] is necessary!

## 2. Device variants

HCB 200 9652.01 Headend control unit with 8A power supply

## 3. General

The Headend Controller HCB 200 is a module of the head end system B-LINE, which can also be used in the head end system C-LINE/ C-LINE<sup>+</sup>.

The B-LINE system is conceived as a complete system for middle sized distribution networks, the C-LINE/ C-LINE<sup>+</sup> for smaller distribution networks. All active modules are programmed via the central Headend Controller.

The individual modules will be addressed by the address switch at the Bus Extender (line) (BEB x00) and at the respective module (position).

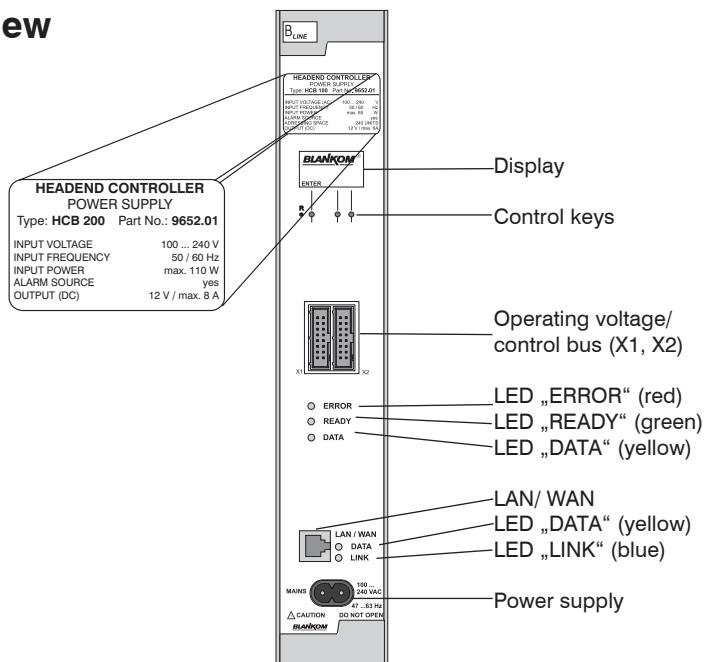
The status of the modules will be displayed by colored LEDs:

- Red - ERROR Control bus error
- Green - READY Operating status
- Yellow - DATA Data traffic at the internal control bus

RJ 45 socket:

- Yellow - DATA Data traffic (LAN/ WAN)
- Blue - LINK Connection

## 4. Front view



## 5. Functional description

The Headend Controller HCB 200 is the central control module of the head end or the individual switch cabinet. It consists of the data interfaces to a PC/ LAN/ WAN and to the Bus Extender (BEB x00). The head end internal data bus has to be connected as seen in chapter 6 to 8 and the alarm function is described in chapter 9. Both bus connections X1 and X2 can be used for that. The data interface to a PC/ LAN/ WAN is implemented as a IP-/ Ethernet interface (RJ 45). Programming can be done but also directly at the control unit (see programming).

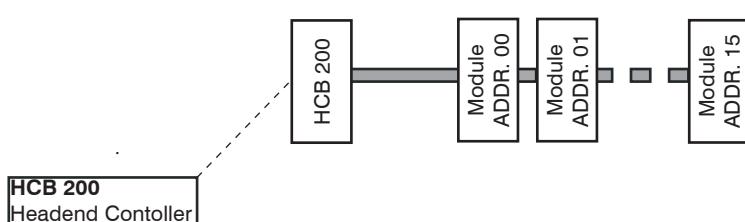
The internal power unit supplies the control unit and in case of a Bus Extender (BEB x00) error it will switch automatically to the respective line. The Headend Controller HCB 200 has an integrated current display. It is recommended to use an individual control unit for every circuit (switch cabinet).

The IP address of each control unit can be edited and adapted to the respective LAN.

Additional information:	Redundancy circuit (Headend Controller)	(chapter 8)
	Structure (minimum configuration)	(chapter 6)
	Option: SNMP and DHCP	

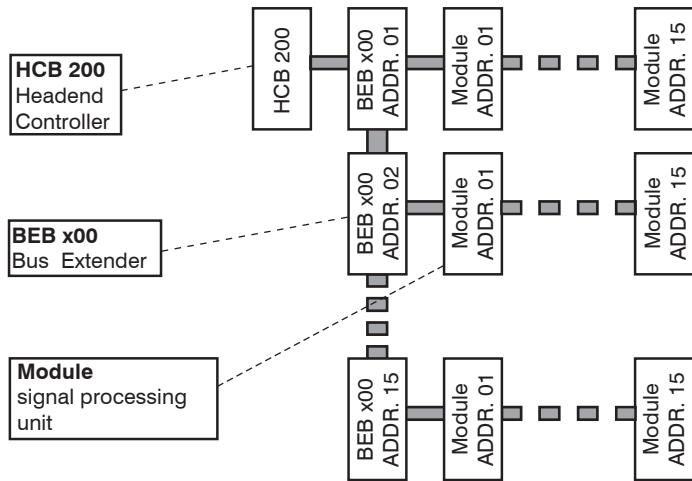
## 6. Structure

### Minimum configuration (without Bus Extender)



The number of the possible module connections (00 ... 15) to a BEB x00 depends on the total power consumption of this line!

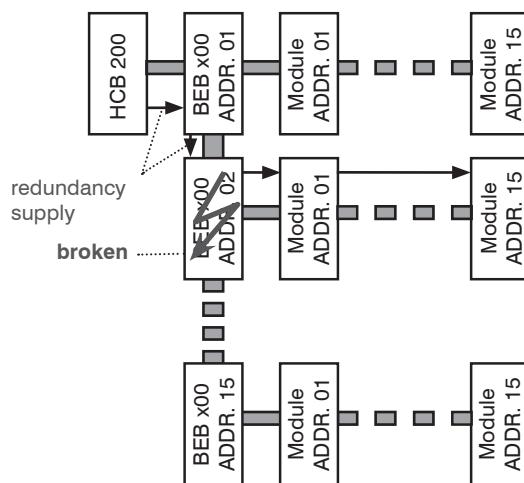
## 7. Head end bus structure (standard, with Bus Extender)



The number of the possible module connections (01 ... 15) to a BEB x00 depends on the total power consumption of this line!

## 8. Redundancy circuit

(Power supply redundancy)



### Description of the power supply redundancy

With the redundant operation of a system, the control unit HCB 200 will automatically take over the function of the power supply, if the Bus Extender BEB x00 is failing .

## 9. Alarm function

To activate the alarm function is additional hardware 9651.01 or 9651.02 necessary!

The device is endorsed by an additional alarm function and current limitations, voltage drops and communication disturbances. The contact 13 in the communication and supply bus is switched (+5V to 0 V) in case of alarm.

The alarm modules are available in 1 RU and in panel form. It is possible to insert the modules in any order into bus system. The signal is fed to a SUB-D 9 connector via relais in case of alarm. All the contacts are galvanically isolated. It is possible to trigger several kinds of alarm.

## 10. Technical data

**Manual operation**

Input/ operation  
Display  
3 Keys  
LCD, lit  
19 x 28 mm

**Physical information**

Dimensions (l x w x h)  
without 19"-adapter  
with 19"-adapter  
Weight  
50 x 276 x 148 mm  
50 x 301 x 148 mm  
about 1.500 g

**Remote control**

Network connection (LAN/ WAN)  
Input connection  
Ethernet, 10 Base T  
RJ 45

**Delivery contents**

1 x Power cord  
1 x Screw driver  
2 x Wrenches  
4 x Terminal resistance 75 Ω  
2 x Multipole sockets

**Address extent**

Without Bus Extender  
With Bus Extender  
16 modules  
240 modules  
(15 x 16)

**Software options**

SNMP activation  
CKB 100 (9650.50)

**Power supply**

Main voltage  
Voltage frequency  
Main connector  
100 ... 240 V (+10%/-5%)  
47 Hz ... 63 Hz  
built in connector  
EN 60320 - 1/ C8  
(IEC 320 C8) [3]  
max. 110 W  
12 V  
66 dB  
max. 8 A\*\*  
yes (9 A typical)  
yes  
yes (≤ 14,5 V)\*  
G 5 x 20, T4A  
(IEC 127 - 2/ V)  
II acc.. DIN VDE 0860 [4]  
IP 20  
according DIN VDE 0871  
(curve B) [5]

\* to reset device 2 minutes without voltage!

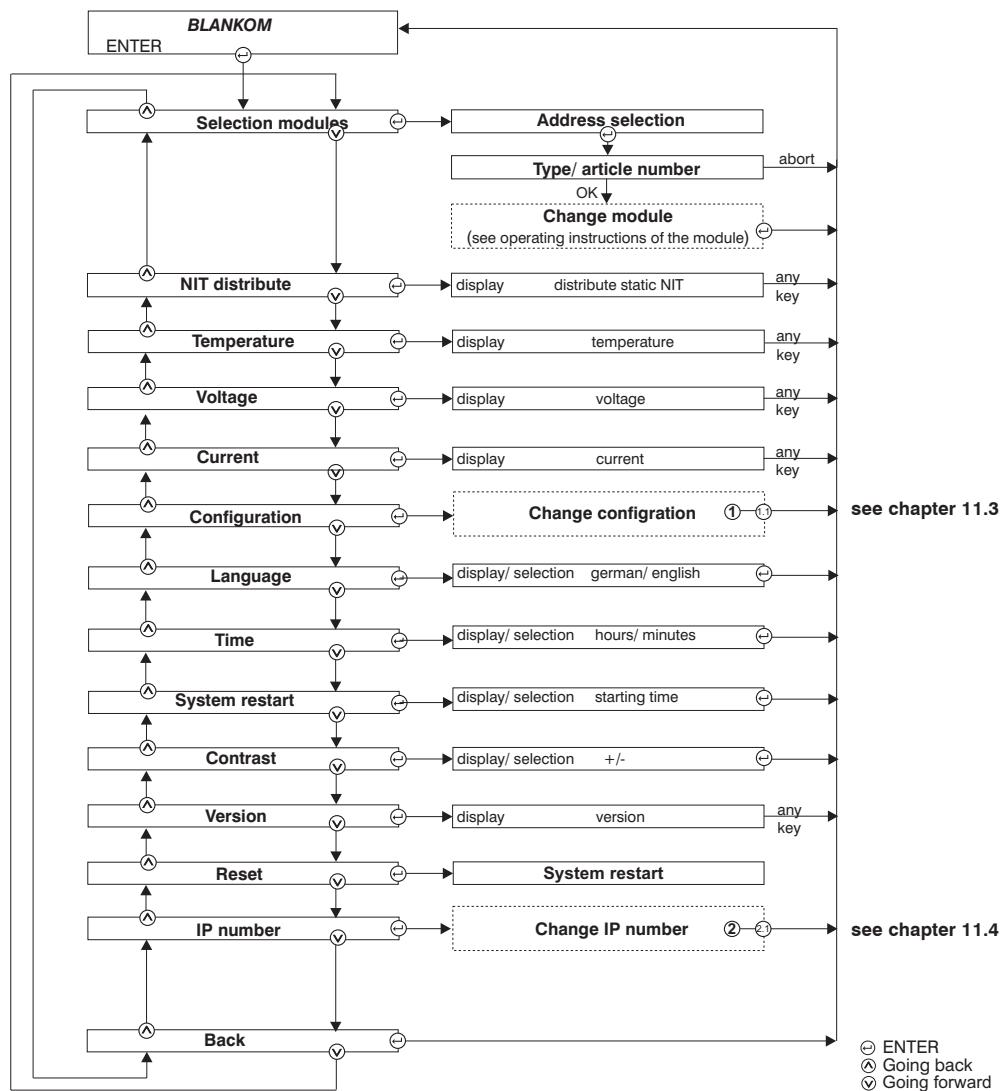
\*\* > 6 A only use bus cable "8 A" !

**Environmental conditions**

Temperature range  
Relative humidity  
Mounting method  
Mounting location  
-10 ... +55°C  
≤ 80 % (non condensing)  
vertical  
splash-proof and  
drip-proof

## 11. Programming

### 11.1 Main program



### 11.2 Adjustments

#### Manual adjustment

- Adjustment of the addresses at the Bus Extender BEB x00 and at the modules
- Activation of the data input at the Headend Controller HCB 200 by pressing the "ENTER"-key
- Display/ Adjustment of the parameter of the HCB 200 or a selected module as in chapter 11.1
- Activation of the programming modus of each module by selecting the line (BEB x00) and the module position (01 ... 15) at the Headend Controller (HCB 200) → the yellow LED at the module will be lit up til the beginning of the parameter adjustment
- Adjustment of the parameter at the selected module according to the individual product description
- After the programming the data will be transmitted automatically to the modules → the yellow LED on the HCB 200 will be lit up during the data transfer process
- The green LED shows the operating status

#### Adjustment with the PC/ laptop

- An "online connection" after IP-standard and an ethernet connection at the PC/ laptop is necessary for the remote programming
- Adjustment of the line/ position addresses at the Bus Extender BEB x00 as well as at the modules
- At the HCB 200 IP-address input (e.g. 192.168.001.001)
- For "direct connection" between a PC and HCB 200 use a crossed patch cable (RJ 45)
- For connection over a deviation use an uncrossed patch cable
- HTML-browser start-up and IP-address as target address input
- If connected correctly the HTML control surface at the PC will open up and a blue LED (LINK) at the HCB 200 will be lit up
- All adjustments of the modules are specified at the control surface

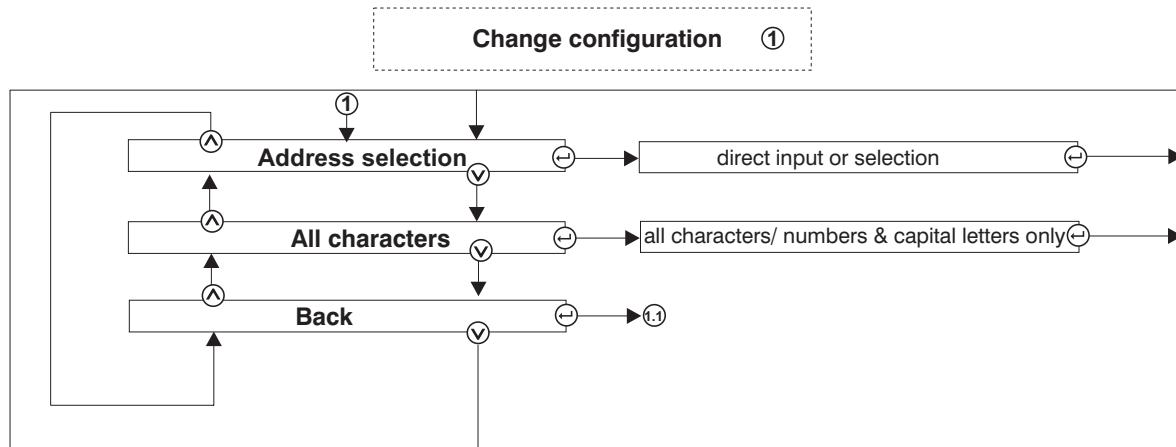
#### Adjustment of removal of write protection

- Removal of write protection by input of "0000" (password) and "0000" (user)

#### Default IP Address

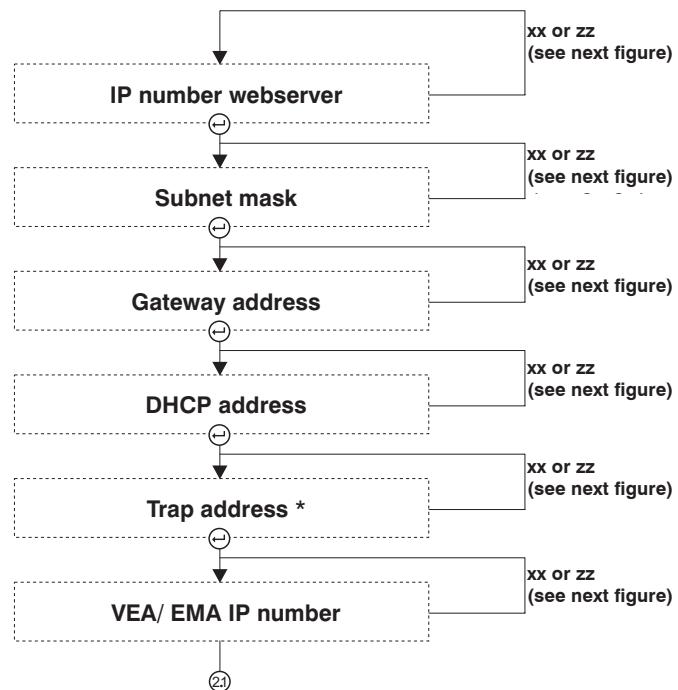
- 192.168.2.80

### 11.3 Subroutine “Change configuration”



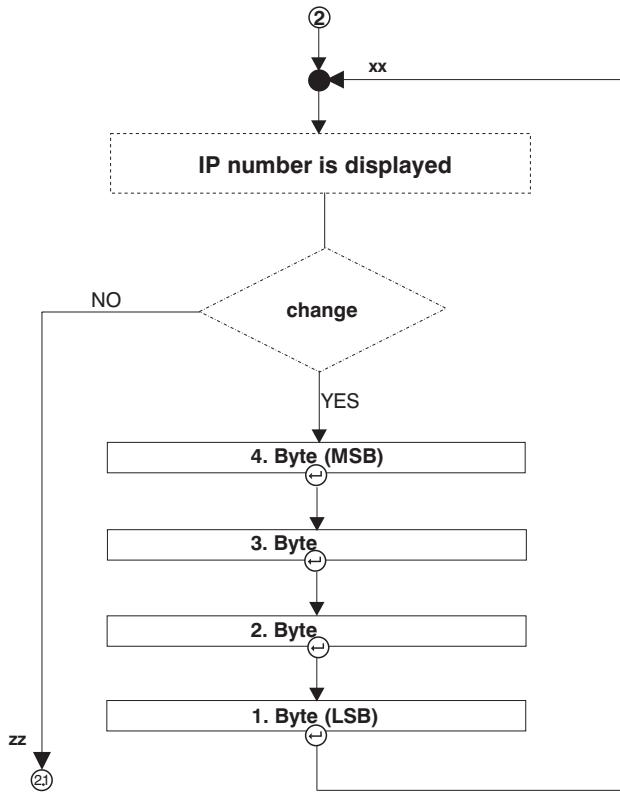
### 11.4 Adjusting of the IP number

Adjusting facilities of IP numbers



\* Software option 9650.50

**Subroutine “Change IP number“**



## 12. Bibliography

- [1] EN 60728-11: Cable networks for television signals, sound signals and interactive services Part 11: Safety (IEC 60728-11:2005); German version EN 60728-11:2005
- [2] EN 50083-2 : Cabled distribution systems for television and sound signals. Electromagnetic compatibility for equipment; EN 50083-2:2001
- [3] EN 60320-1: Appliance couplers for household and similar general purposes Part 1: General requirements (IEC 60320-1:2001 + A1:2007); German version EN 60320-1:2001 + A1:2007
- [4] DIN VDE 0860: Audio, video and similar electronic apparatus, Safety requirements (IEC 60065:2001, modified + A1:2005, modified); German version EN 60065:2002 + A1:2006 + Cor.:2007 + A11:2008
- [5] DIN VDE 0871: Radio noise suppression of high frequency units, Determination of limits for industrial, scientific and medical equipment, identical with CISPR 23 :1987

## 13. History

Version	Date	Modification	Author
1.00	15.04.2009	basic document	Häußer, Rudolph
1.01	30.07.2009	revision	Häußer
1.02	15.12.2009	revision (program flow)	Häußer

Options available upon request! Subjects to changes due to technical progress.

# CE Declaration of Conformity

## The Manufacturer

BLANKOM Antennentechnik GmbH · Hermann-Petersilge-Str. 1 · 07422 Bad Blankenburg · Germany

herewith declares the conformity of the product

**Product name:** Headend Controller

**Type:** HCB 200

**Product number:** 9652.01

according to the following regulations

EN 50083-2

EN 60728-11 (as far as relevant)

and additional device-specific regulations, enclosed above, which this product is subjected to.

**Date:** 14.04.2009

**Signature:**



Piero Kirchner  
(Managing Director)